

IN THE CLAIMS:

Kindly replace the claims as follows:

1. (Currently Amended) A method for discovering by an OLT (Optical Line Termination) OAM (Operations, Administration & Maintenance) capabilities of multiple ONUs (Optical Network Units) connected to the OLT in an Ethernet passive optical network, the method comprising the steps of:

assigning by the OLT identifications for identifying each of the ONUs according to registration requests from the ONUs connected to the OLT, and starting by the OLT an OAM capability discovery operation for the OAM capabilities of the ONUs by transmitting first OAM capability information messages; and

receiving by the OLT second OAM capability information messages for reporting the OAM capabilities of the ONUs from the ONUs having received the first OAM capability information message.

~~A method for providing a transmission discovery in an Ethernet passive optical network comprising an optical line termination (OLT) connected by an optical fiber to a plurality of optical network units (ONUs), the method comprising the steps of:~~

~~the OLT assigning identifications for each of the plurality of ONUs according to a registration request received from the plurality of ONUs and then, transmitting an OAM capability information message to the registered ONUs according to a registration sequence; and~~

~~the OLT receiving an OAM capability information messages from each of the ONUs having received the OAM capability information message.~~

2. (Currently Amended) The method as claimed in claim 1, further comprising a step of transmitting by the OLT a third OAM capability information message for reporting completion of the OAM capability discovery operation to a predetermined ONU from among the multiple ONUs when the OLT receives the second OAM capability information message from the predetermined ONU. ~~the step of the OLT transmitting an OAM capability discovery completion message to the plurality of ONUs if the OAM capability information~~

messages are received from the plurality of ONUs.

3. (Currently Amended) The method as claimed in claim 1, wherein a structure of a data field constituting each of the messages has a first field and a second field, which are added to a general structure of an OAM state PDU (packet data unit) data field, the first field storing static allocated bandwidth information in order to transmit the OAM capability when the OAM capability discovery operation is performed, and the second field storing information on a network topology.
~~wherein the OAM capability information messages further includes a first field for storing a static allocated bandwidth information — and a second field for storing information regarding a network topology.~~

4. (Currently Amended) A method for discovering by an OLT (Optical Line Termination) OAM (Operations, Administration & Maintenance) capabilities of multiple ONUs (Optical Network Units) connected to the OLT in an Ethernet passive optical network, the method comprising the steps of:

assigning by the OLT identifications for identifying each of the ONUs according to registration requests from the ONUs connected to the OLT, and transmitting by the OLT first OAM capability information messages for starting an OAM capability discovery operation for the ONUs to the ONUs;

waiting by the OLT reception of second OAM capability information messages for reporting OAM capabilities from the ONUs during a first predetermined period of time after transmission of the first OAM capability information messages; and

transmitting by the OLT third OAM capability information messages for reporting completion of the OAM capability discovery operation by the OLT to the ONUs having transmitted the second OAM capability information messages, when the second OAM capability information messages are received from the ONUs.

A method for providing a transmission discovery in an Ethernet passive optical network comprising an optical line termination (OLT) connected by an optical fiber to a plurality of optical network units (ONUs), the method comprising the steps of:

~~the OLT assigning identifications for each of the plurality of ONUs according to a registration request from the plurality of ONUs and then, transmitting an OAM capability information messages to the registered plurality of ONUs according to a registration sequence and waiting for the reception of the OAM capability information messages from the ONUs for a first predetermined time period; and~~

~~transmitting the OAM capability information messages of the ONUs to the OLT and waiting for the reception of the OAM capability discovery completion message transmitted from the OLT for a second predetermined time period.~~

5. (Canceled)

6. (Currently Amended) The method as claimed in claim 4, further comprising a step of retransmitting by the OLT the first OAM capability information messages for starting the OAM capability discovery operation for the ONUs according to the first step, when the second OAM capability information messages are not received from the ONUs during the first predetermined period of time for which the OLT waits the reception of the second OAM capability information messages.

~~The method as claimed in claim 4, further comprising the step of the OLT retransmitting to the ONUs the OAM capability information messages if the OAM capability information messages are not received with the first predetermined time period.~~

7. (Currently Amended) The method as claimed in claim 4, wherein each of the ONUs receives the first OAM capability information message for starting the OAM capability discovery operation from the OLT,

transmits the second OAM capability information message for reporting the OAM capability of the ONU to the OLT, and

waits the third OAM capability information message from the OLT for reporting the completion of the OAM capability discovery operation for the ONU during a second predetermined period of time.

~~The method as claimed in claim 4, further comprising the step of the OLT retransmitting to the OLT the OAM capability information messages if the OAM capability information messages are not received within the second predetermined time period.~~

8. (Currently Amended) The method as claimed in claim 4, wherein a structure of a data field constituting each of the messages has a first field and a second field, which are added to a general structure of an OAM state PDU (packet data unit) data field, the first field storing static allocated bandwidth information in order to transmit the OAM capability when the OAM capability discovery operation is performed, and the second field storing information on a network topology.

~~The method as claimed in claim 4, wherein the OAM capability information messages further includes a first field for storing a static allocated bandwidth information and a second field for storing information regarding a network topology.~~

9. (New) The method as claimed in claim 6, wherein the ONU retransmits the second OAM capability information message for reporting the OAM capability of the ONU when the third OAM capability information message for reporting the completion of the OAM capability discovery operation for the ONU is not received from the OLT during the second predetermined period of time

10. (New) The method as claimed in claim one of claims 1 to 3, wherein the OAM capability information message includes a field for representing an operation state of the OAM capability information message.

11. (New) The method as claimed in claim 9, wherein the field for representing the operation state of the OAM capability information message includes one of:

a first set value for representing that the OLT starts the discovery operation for the OAM capabilities of the ONUs;

a second set value for representing report of the OAM capabilities of the ONUs;

a third set value for representing the completion of the OAM capability discovery operation by the OLT; and

a fourth set value for representing an OAM state PDU after the completion of the OAM capability discovery operation.

12. (New) The method as claimed in claim one of claims 4, wherein the OAM capability information message includes a field for representing an operation state of the OAM capability information message.

13. (New) The method as claimed in claim 11, wherein the field for representing the operation state of the OAM capability information message includes one of:

a first set value for representing that the OLT starts the discovery operation for the OAM capabilities of the ONUs;

a second set value for representing report of the OAM capabilities of the ONUs;

a third set value for representing the completion of the OAM capability discovery operation by the OLT; and

a fourth set value for representing an OAM state PDU after the completion of the OAM capability discovery operation.